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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/782,853	02/23/2004	Olaf Busse	03P00635	5488
24252	7590	05/18/2005		
OSRAM SYLVANIA INC 100 ENDICOTT STREET DANVERS, MA 01923			EXAMINER LIE, ANGELA M	
			ART UNIT 2821	PAPER NUMBER

DATE MAILED: 05/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/782,853	BUSSE ET AL.	
	Examiner	Art Unit	
	Angela M. Lie	2821	

AK

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 2/23/2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>02/23/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claim 5 is objected to because of the following informalities:
 - Meaning of “determining device” is not clearly understood, it is not explained in the specification. Since determining the resonant frequency is one of the main aspects of the invention, it is important that such an element as “determining device” is clearly defined.
 - The phrase “across/in” is unclear. It is suggested that the applicant rewrite the third paragraph of claims 1 and 5, and directly refer across to voltage and in to current.

Appropriate corrections are required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3 and 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spencer et al in the view of www.kineticbooks.com/physics/17296/17329/sp.html.

As to claim 1, Spencer et al teach the method for measuring the resonant frequency of a resonant circuit by varying the frequency of a supply voltage for the resonant circuit within a predetermined frequency range (page 8, second paragraph),

measuring a voltage or a current across/in the resonant circuit as a function of the varied frequency (page 8, 1st and 5th paragraph), running through the predetermined frequency range is in both directions (even though Spencer et al do not explicitly state that the frequency range is run in both directions, it is an obvious step for one who wants to achieve accurate results. Once measurements are repeated, and the average is taken, this final result has a lower probability of having an error than the first reading. An additional advantage of running frequency range in both directions, is the fact that it saves time, because person performing an experiment does not have to reset the range of frequency and start all over again, instead a person can continue from the point where he or she ended). Moreover Spencer et al also teach that in the process a maximum for measured voltage or the measured current is established in each case (page 8, 5th paragraph). Spencer et al do not teach however that the resonant frequency is determined from the two maxima. Chapter 33 in Kinetic Book (which can be easily accessed by the web page link listed above) teaches that peak in the current waveform corresponds to the resonant frequency (second drawing on the first page). As it was mentioned above, once additional measurements are taken, the accuracy of the measured value increases, therefore it would have been obvious to one skilled in the art, in case of the resonant frequency with two maximum points, to take an average of them and claim it as the most accurate result. It would have been obvious to one of an ordinary skill in the art during the time when the invention was made to use teaching about current peak corresponding to resonant frequency presented in Chapter 33 in Kinetic Book, and combine it with the measuring circuitry as taught by Spencer et al

(page 6 Figure 1), because measuring resonant frequency based on the maximum of current or voltage is method well known in the art, it is also simple to perform and it does not require very sophisticated and expensive tools (i.e. most labs are equipped in oscilloscope and function generator).

As to claims 2 and 6, Spencer et al teach the apparatus which is capable of varying the frequency of the supply voltage, the frequency range is run through, starting from the highest frequency to the lowest, or vice versa, and back again (page 8, 3rd paragraph, Spencer et al do not explicitly state that the same frequency range is run back and forth, however they do teach that different frequency ranges should be run multiple times so that accuracy of measurement also increases. It is analogous to starting from lowest or highest frequency and then going back again, because the main purpose of this action is to increase an accuracy of the result (in case there was some error in previous measurement)).

As to claims 3 and 7, Spencer et al and Chapter 33 in Kinetic Book, teach all the limitations presented in claims 1 and 5 respectively. Chapter 33 also indirectly teaches that the resonant frequency is determined by averaging the two frequencies, at which in each case a maximum is established. Chapter 33 teaches that the current peak (maxima) corresponds to resonant frequency (www.kineticbooks.com/physics/17296/17329/sp.html, drawing on the first page). If the measurement is done at least twice, there will be at least two maxima noticeable in the output graph. It is obvious to one skilled in the art that repeating measurements and averaging outcomes, increases accuracy of the final result, therefore if one wants to

measure accurate resonant frequency of the circuit, an average of the observed maxima should be taken.

As to claim 5, Spencer et al teach an apparatus comprising: a supply device for supplying the resonant circuit with a supply voltage, whose frequency can be varied within predetermined frequency range (page 6 figure 1, elements sweep function generator and power supply; page 8 second paragraph), a measuring device for measuring a voltage or a current across/in the resonant circuit as a function of frequency (page 8 3rd paragraph), whereby it is possible to run through the frequency of the supply voltage in the predetermined frequency range at least once in both directions, and, in the process, to measure in each case a maximum for the voltage or the current (page 8 3rd paragraph). Spencer et al also teach determining the resonant frequency with the aid of a determining device (page 8 3rd paragraph). Spencer et al do not teach determining resonant frequency from two maxima, however it is obvious to one of the ordinary skill in the art that if the circuit has at least two peaks (where the number of maxima depends on the number of times the experiment was repeated), it is a good practice to average peaks (maxima) because this leads to more accurate result. Averaging two values or more is an easy step, and it also does not take too much time, especially if computer is connected to the scope and it is programmed to perform averaging calculations.

4. Claims 4 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spencer et al in the view of www.kineticbooks.com/physics/17296/17329/sp.html and further in the view of King (Series Minimum and Maximum Algorithm,

<http://www.cee.hw.ac.uk/~pjbk/pathways/cpp1/node37.html>). Spencer et al and Chapter 33 in Kinetic Book teach all the limitations presented in claim 1 and 5 respectively. They do not teach however that maximum is determined by a measured value being stored when this measured value is higher than the preceding one. King teaches the computer algorithm for finding maximum or minimum value in the list of number (page 2, first paragraph). King's teaching inherently has to be combined with the memory in order to store highest value as algorithm is searching for the maximum. It would have been obvious to one of the ordinary skill in the art during the time when the invention was made to incorporate King's algorithm for finding a maximum value into the device as described in claims 1 and 5, because this algorithm is precise in finding the highest value, it has really low probability of making an error, and it also does not need a big memory since only one value has to be stored at the time. Because of all those advantages, precise calculations could be accomplished in inexpensive way.

The Prior Art

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- US 4564805 discloses oscilloscope with integrated frequency counter and method of measuring frequency
- US 4743845 discloses oscilloscope based signal level measurement system
- US 3253216 discloses frequency response testing system employing pre-calibrated frequency sweeps.

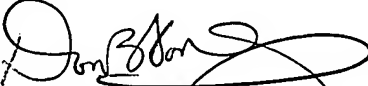
Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angela M. Lie whose telephone number is 571-272-8445. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on 571-272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AL


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